

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Larry M. Tichauer

Application No.:

Filed: Herewith

For: **PUSH-PULL CONFIGURATIONS
FOR SEMICONDUCTOR DEVICE
HAVING A PN-JUNCTION WITH A
PHOTOSENSITIVE REGION**

Examiner:

Art Group:

PRELIMINARY AMENDMENT

Commissioner for Patents
Washington, DC 20231-9999

Sir:

It is requested that this Preliminary Amendment be entered prior to the calculation of the filing fees and first examination on this continuation application.

AMENDMENTS

In the Specification

Please insert the following paragraph on page 1, line 1:

This is a continuation patent application of Serial Number 09/576,647, filed on May 22, 2000, entitled "PUSH-PULL CONFIGURATIONS FOR SEMICONDUCTOR DEVICE HAVING A PN-JUNCTION WITH A PHOTSENSITIVE REGION," which is a continuation-in-part patent application of Serial Number 09/532,581, filed on March 22, 2000, entitled "SEMICONDUCTOR DEVICE HAVING A PN-JUNCTION WITH A PHOTSENSITIVE REGION," which are incorporated herein by reference.

In the Claims

A clean version of the entire set of pending claims as amended by this Response is presented on the following page.

Claims 1-12 are canceled.

Claims 13-30 are added.

Clean Version of the Entire Set of Pending Claims

1 13. A device, comprising:

2 a first sub-device comprising:

3 a p-doped substrate;

4 a first n-doped region situated within said p-doped substrate;

5 a first p-doped region situated within said p-doped substrate;

6 and

7 a first photosensitive region situated between said first n-doped
8 region and said first p-doped region, within said p-substrate; and

9 a second sub-device comprising:

10 an n-doped substrate;

11 a second n-doped region situated within said n-doped
12 substrate;

13 a second p-doped region situated within said n-doped
14 substrate; and

15 a second photosensitive region situated between said second n-
16 doped region and said second p-doped region, within said n-substrate,
17 wherein said first p-doped region is electrically coupled to said second n-
18 doped region.

1 14. The device of claim 13, wherein said first n-doped region is
2 electrically coupled to a positive power supply rail.

1 15. The device of claim 14, wherein said first n-doped region is
2 electrically coupled to said positive power supply rail by way of a first
3 resistive element.

1 16. The device of claim 13, wherein said second p-doped region is
2 electrically coupled to a negative power supply rail.

1 17. The device of claim 16, wherein said second p-doped region is
2 electrically coupled to said negative power supply rail by way of a resistive
3 element.

1 18. The device of claim 13, wherein said first n-doped region is
2 electrically coupled to said positive power supply rail by way of a first
3 resistive element, and said second p-doped region is electrically coupled to
4 said negative power supply rail by way of a second resistive element.

1 19. The device of claim 13, wherein said first p-doped region and
2 said second n-doped region are electrically coupled to a ground potential
3 rail.

1 20. The device of claim 13, further comprising a fiber optic channel
2 coupled to said first and second photosensitive regions.

1 21. A device, comprising:
2 a first sub-device comprising:
3 a p-doped substrate;
4 a first n-doped region situated within said p-doped substrate;
5 a first p-doped region situated within said p-doped substrate;
6 and
7 a first photosensitive region situated between said first n-doped
8 region and said first p-doped region, within said p-substrate; and
9 a second sub-device comprising:

10 an n-doped substrate;
11 a second n-doped region situated within said n-doped
12 substrate;
13 a second p-doped region situated within said n-doped
14 substrate; and
15 a second photosensitive region situated between said second n-
16 doped region and said second p-doped region, within said n-substrate,
17 wherein said first p-doped region is electrically coupled to said second p-
18 doped region.

1 22. The device of claim 21, wherein said first p-doped region is
2 electrically coupled to said second p-doped region by way of a resistive
3 element.

1 23. The device of claim 21, wherein said first n-doped region is
2 electrically coupled to said second n-doped region.

1 24. The device of claim 23, wherein said first n-doped region is
2 electrically coupled to said second n-doped region by way of a resistive
3 element.

1 25. The device of claim 21, wherein first p-doped region is
2 electrically coupled to said second p-doped region and said first n-doped
3 region is electrically coupled to said second n-doped region.

1 26. The device of claim 25, wherein said first p-doped region is
2 electrically coupled to said second p-doped region by way of a first resistive
3 element and said first n-doped region is electrically coupled to said second
4 n-doped region by way of a second resistive element.

1 27. The device of claim 26, wherein said first p-doped region is
2 electrically coupled to a ground potential rail, and said second n-doped
3 region is electrically coupled to a positive power supply rail.

1 28. The device of claim 13, further comprising a fiber optic channel
2 coupled to said first and second photosensitive regions.

1 29. A device, comprising:
2 a first sub-device comprising:
3 a first p-doped region;
4 a first n-doped region; and
5 a first p-doped photosensitive region to control a first current
6 flowing from said first n-doped region to said first p-doped region in
7 response to an optical signal; and
8 a second sub-device comprising:
9 a second p-doped region;
10 a second n-doped region; and
11 a second n-doped photosensitive region to control a second
12 current flowing from said n-doped region to said second p-doped region in
13 response to said optical signal.

1 30. The device of claim 29, further comprising a fiber optic channel
2 to carry said optical signal, said fiber optic channel being coupled to said
3 first and second photosensitive regions.

REMARKS

Original claims 1–12 are cancelled. New claims 13–30 are presented for examination in the patent application.

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Version With Markings to Show Changes Made

In the Specification

Please insert the following paragraph on page 1, line 1:

This is a continuation patent application of Serial Number 09/576,647, filed on May 22, 2000, entitled "PUSH-PULL CONFIGURATIONS FOR SEMICONDUCTOR DEVICE HAVING A PN-JUNCTION WITH A PHOTSENSITIVE REGION," which is a continuation-in-part patent application of Serial Number 09/532,581, filed on March 22, 2000, entitled "SEMICONDUCTOR DEVICE HAVING A PN-JUNCTION WITH A PHOTSENSITIVE REGION," which are incorporated herein by reference.

In the Claims

1 13. A device, comprising:
2 a first sub-device comprising:
3 a p-doped substrate;
4 a first n-doped region situated within said p-doped substrate;
5 a first p-doped region situated within said p-doped substrate;
6 and
7 a first photosensitive region situated between said first n-doped
8 region and said first p-doped region, within said p-substrate; and
9 a second sub-device comprising:
10 an n-doped substrate;
11 a second n-doped region situated within said n-doped
12 substrate;
13 a second p-doped region situated within said n-doped
14 substrate; and
15 a second photosensitive region situated between said second n-
16 doped region and said second p-doped region, within said n-substrate,
17 wherein said first p-doped region is electrically coupled to said second n-
18 doped region.

1 14. The device of claim 13, wherein said first n-doped region is
2 electrically coupled to a positive power supply rail.

1 15. The device of claim 14, wherein said first n-doped region is
2 electrically coupled to said positive power supply rail by way of a resistive
3 element.

1 16. The device of claim 13, wherein said second p-doped region is
2 electrically coupled to a negative power supply rail.

1 17. The device of claim 16, wherein said second p-doped region is
2 electrically coupled to said negative power supply rail by way of a resistive
3 element.

1 18. The device of claim 13, wherein said first n-doped region is
2 electrically coupled to said positive power supply rail by way of a first
3 resistive element, and said second p-doped region is electrically coupled to
4 said negative power supply rail by way of a second resistive element.

1 19. The device of claim 13, wherein said first p-doped region and
2 said second n-doped region are electrically coupled to a ground potential
3 rail.

1 20. The device of claim 13, further comprising a fiber optic channel
2 coupled to said first and second photosensitive regions.

1 21. A device, comprising:
2 a first sub-device comprising:
3 a p-doped substrate;
4 a first n-doped region situated within said p-doped substrate;
5 a first p-doped region situated within said p-doped substrate;
6 and
7 a first photosensitive region situated between said first n-doped
8 region and said first p-doped region, within said p-substrate; and
9 a second sub-device comprising:

10 an n-doped substrate;
11 a second n-doped region situated within said n-doped
12 substrate;
13 a second p-doped region situated within said n-doped
14 substrate; and
15 a second photosensitive region situated between said second n-
16 doped region and said second p-doped region, within said n-substrate,
17 wherein said first p-doped region is electrically coupled to said second p-
18 doped region.

1 22. The device of claim 21, wherein said first p-doped region is
2 electrically coupled to said second p-doped region by way of a resistive
3 element.

1 23. The device of claim 21, wherein said first n-doped region is
2 electrically coupled to said second n-doped region.

1 24. The device of claim 23, wherein said first n-doped region is
2 electrically coupled to said second n-doped region by way of a resistive
3 element.

1 25. The device of claim 21, wherein first p-doped region is
2 electrically coupled to said second p-doped region and said first n-doped
3 region is electrically coupled to said second n-doped region.

1 26. The device of claim 25, wherein said first p-doped region is
2 electrically coupled to said second p-doped region by way of a first resistive
3 element and said first n-doped region is electrically coupled to said second
4 n-doped region by way of a second resistive element.

1 27. The device of claim 26, wherein said first p-doped region is
2 electrically coupled to a ground potential rail, and said second n-doped
3 region is electrically coupled to a positive power supply rail.

1 28. The device of claim 13, further comprising a fiber optic channel
2 coupled to said first and second photosensitive regions.

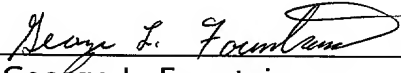
1 29. A device, comprising:
2 a first sub-device comprising:
3 a first p-doped region;
4 a first n-doped region; and
5 a first p-doped photosensitive region to control a first current
6 flowing from said first n-doped region to said first p-doped region in
7 response to an optical signal; and
8 a second sub-device comprising:
9 a second p-doped region;
10 a second n-doped region; and
11 a second n-doped photosensitive region to control a second
12 current flowing from said n-doped region to said second p-doped region in
13 response to said optical signal.

1 30. The device of claim 29, further comprising a fiber optic channel
2 to carry said optical signal, said fiber optic channel being coupled to said
3 first and second photosensitive regions.

Respectfully submitted,

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Dated: February 6, 2002

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CERTIFICATE OF MAILING

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